



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,467	04/11/2001	Michael McLoughlin	SRT-024	4529
21323	7590	09/16/2004	EXAMINER	
TESTA, HURWITZ & THIBEAULT, LLP HIGH STREET TOWER 125 HIGH STREET BOSTON, MA 02110			MCCARTHY, CHRISTOPHER S	
			ART UNIT	PAPER NUMBER
			2113	
DATE MAILED: 09/16/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/832,467	MCLOUGHLIN ET AL.
	Examiner	Art Unit
	Christopher S. McCarthy	2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 April 2001.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-21 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 11 April 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 7, 13, and 21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term “substantially similar” is unclear as to what extent the instruction needs to be the same or different from the comparative instruction.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-9, 11-17, 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Petivan et al. U.S. Patent 6,141,769.

As per claim 1, Petivan teaches a fault-tolerant server comprising: (a) a communications link (figure 3); (b) a first computing element in electrical communication with the communications link (abstract); (c) a second computing element in electrical communication

with the communications link (abstract); (d) a first local mass storage device in electrical communication with the first computing element (figure 2); and (e) a second local mass storage device in electrical communication with the second computing element (figure 2; column 2, lines 39-41), wherein the first computing element and the second computing element issue substantially similar instruction streams to at least one of the first local mass storage device and the second local mass storage device (column 3, lines 63-67).

As per claim 2, Petivan teaches the fault-tolerant server of claim 1 wherein each computing element comprises a respective Central Processing Unit (CPU) in electrical communication with a respective local input-output (I/O) subsystem (column 3, lines 63-67).

As per claim 3, Petivan teaches the fault-tolerant server of claim 2 wherein the local I/O subsystem is in electrical communication with at least one of the first local mass storage device and the second local mass storage device (column 2, lines 45-48).

As per claim 4, Petivan teaches the fault-tolerant server of claim 2 wherein the communications link comprises a respective switching fabric in electrical communication with the respective CPU (column 3, lines 18-20).

As per claim 5, Petivan teaches the fault-tolerant server of claim 4 wherein the switching fabric is in electrical communication with at least one of the first local I/O subsystem and the second local I/O subsystem (column 3, lines 18-20).

As per claim 6, Petivan teaches the fault-tolerant server of claim 5 wherein the switching fabric is in electrical communication with the other one of the first local I/O subsystem and the second local I/O subsystem (column 3, lines 18-20).

As per claim 7, Petivan teaches the fault-tolerant server of claim 1 further comprising a delay module in electrical communication with the local I/O subsystem to delay transmission of at least one of the substantially similar instruction streams (column 9, lines 18-22).

As per claim 8, Petivan teaches the fault-tolerant server of claim 1 wherein the communications link comprises a backplane (column 2, lines 48-50).

As per claim 9, Petivan teaches the fault-tolerant server of claim 8 wherein the communications link further comprises a backplane link in communication with the backplane (column 2, lines 48-50).

As per claim 11, Petivan the fault-tolerant server of claim 1 wherein the first local mass storage device is located on a same motherboard as the first computing element (column 2, lines 39-41; figure 2).

As per claim 12, Petivan the fault-tolerant server of claim 1 wherein the second local mass storage device is located on a same motherboard as the second computing element (figure 2; column 2, lines 39-41).

As per claim 13, Petivan a method for accessing at least one of a first local mass storage device and a second local mass storage device in a fault-tolerant server, the method comprising the steps of: (a) establishing communication between a first computing element and a first local mass storage device; (b) establishing communication between a second computing element and a second local mass storage device (abstract; figure 2; column 2, lines 39-41); and (c) issuing, by the first computing element and the second computing element, substantially similar instruction streams to at least one of the first local mass storage device and the second local mass storage device (column 3, lines 63-67).

As per claim 14, Petivan the method of claim 13 further comprising the step of executing the second computing element in lockstep with the first computing element (column 3, lines 62-67).

As per claim 15, Petivan the method of claim 13 wherein step (c) comprises the steps of: (c-a) storing a datum in one of the first local mass storage device and the second local mass storage device (column 9, lines 52-53), and (c-b) storing the datum in the other one of the first local mass storage device and the second local mass storage device by mirroring software (column 14, lines 40-46).

As per claim 16, Petivan the method of claim 13 further comprising the step of communicating with a backplane (column 2, lines 48-50).

As per claim 17, Petivan the method of claim 13 further comprising introducing a parity bit to detect an error in the established communication (column 4, lines 25-29; column 12, lines 3-8).

As per claim 19, Petivan the method of claim 13 further comprising the step of communicating with an input/output (I/O) subsystem over a switching fabric (column 3, lines 18-20).

As per claim 20, Petivan the method of claim 13 further comprising the step of delaying the accessing of at least one of the first local mass storage device and the second local mass storage device (column 9, lines 18-22).

As per claim 21, Petivan an apparatus for accessing at least one of a first local mass storage device and a second local mass storage device in a fault-tolerant server, the apparatus comprising: (a) means for establishing communication between a first computing element and a

Art Unit: 2113

first local mass storage device; (b) means for establishing communication between a second computing element and a second local mass storage device (abstract; figure 2; column 2, lines 39-41); and (c) means for issuing, by the first computing element and the second computing element, substantially similar instruction streams to at least one of the first local mass storage device and the second local mass storage device (column 3, lines 63-67).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petivan.

As per claims 10 and 18, Petivan does not specifically disclose the first computing element and the second computing element to further comprise a 1U rack-mount motherboard and the step of communicating therein. However, rack-mounting equipment is notoriously well known in the art. Examiner takes Official Notice for a 1U rack-mount form factor circuitry, such circuitry comprising a motherboard. A person of ordinary skill in the art at the time of the invention would have been motivated to use a 1U rack-mount form factor because he would not want to simply put the equipment on a shelf, it provides a more manageable footprint, it looks professional and industrial, and because it is a matter of design.

Art Unit: 2113

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See attached PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. McCarthy whose telephone number is (703)305-7599, and (571) 272-3651 after 10/15/2004. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703)305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csm
September 10, 2004


ROBERT BEAUSOEL
EXAMINER
TECHNOLOGY CENTER 2100